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10/509,755	09/30/2004	Yuichiro Sugita	43890-690	8140

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EXAMINER	
VIJAYAKUMAR, KALLAMBELLA M	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/509,755	SUGITA ET AL.	
	Examiner	Art Unit	
	Kallambella Vijayakumar	1751	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 February 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-3,5,6 and 8-29* is/are pending in the application.

4a) Of the above claim(s) *2,3 and 17-29* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1, 5-6 and 8-16* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claims 1, 8-10 and 13-16 were amended. Claims 4 and 7 cancelled. Claims 1-3, 5-6 and 8-29 are currently pending with the application. Claims 2-3 and 17-29 were withdrawn from consideration due to the restriction requirement. Claims 1, 5-6 and 8-16 are currently being prosecuted.

Applicant's arguments filed 05/24/2006 have been fully considered that overcomes the following rejections/objections cited in the last office action:

1). Claim 6 objected to because of the following informalities.

2). Rejection of Claim-1 under 35 U.S.C. 112, second paragraph

2. Rejection of claims over Omoya et al (US 6,139,777) cited in the last office action.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim-1 recites the limitation of "conductive particles, primary particles and agglomerate of primary particles" and it is not clear whether this limitation encompasses three different components as conductive particles, or conductive particles comprising primary particles and agglomerates of primary particles.

The examiner construes conductive particles to comprise primary particles and agglomerates of primary particles for the purposes of the examination based on the disclosure in the specification (US 2005/0172483; Para 0033).

Claim 1 recites the limitation "the binder" in the last line. There is insufficient antecedent basis for this limitation in the claim. It is suggested to make the binder a requisite part of the composition to overcome this rejection.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 1 and 12-13 are rejected under 35 U.S.C. 102(b) as being anticipated by Durand et al (US 5,180,523).

The examiner makes of record that instant claim 12 recite a broad range of components followed by a series of narrow ranges. For examination purposes, the examiner asserts that the narrow ranges recited in instant claim 12 are merely exemplary ranges, and thus, the prior art will be applied against the broadest ranges recited in instant claim 12. Furthermore, the examiner suggests that applicant should delete the narrow ranges from instant claim 12, and add new dependent claims that recite the narrow ranges recited in instant claim 12.

Durand et al teach the composition of conductive cement comprising a mixture of two epoxy resins, and an admixture of silver particles with a particle size of 1.27-2,540 microns (0.05 mil-100 mil) and silver agglomerates with an agglomerate size of 2.0-10.6 microns (Abstract, Cl-4, Ln 63-65; Cl-5, Ln 1-5). A specific example contained: (i). Particulate-A, Silver flakes with a Microtrac distribution with a (d_{50}) mean size of ~7 micron (distribution range <2 to 14 micron), surface area of 3-0.6 m^2/g; (ii). Particulate-B, **Silver agglomerates** of with a Microtrac distribution with a (d_{50}) mean size of 4.5 micron (distribution range <2 to 10.6 micron), surface area of 1.62 m^2/g; (iii). Particulate-C, **Silver powder** <primary particle> with a Microtrac distribution with a (d_{50}) mean size of **1.61** micron (distribution range <0.51 to 5.27 micron), surface area of 1.41 m^2/g; and (d). epoxy/Bisphenol-F resin (Cl-7-8; Example-1, Table). The degree of agglomeration of the fine Ag conductive particles in the composition will be 2.8 (4.5 micron for agglomerates/1.61 micron for particles). The instant claim limitation as recited does not restrict the

conductive particles to the primary particles with a specific particle diameter and their agglomerates meeting the requisite degree of agglomeration. The specific example given in the Table containing 76.5 wt% Ag and 23.5 wt% epoxy translates to: 9.4 cc Ag flake (30.6 g/3.25 g/cc(avg) + **12.4 cc Ag agglomerate** (22.95 g/1.85 g/cc) + **8.5 cc Ag powder (primary particle)** (22.95 g/2.7 g/cc)= **20.9 cc of silver (agglomerate+ particle)** and **20.3 cc epoxy** (23.5 g/1.19 g/cc; See Data for DER 330 and DER 354 Epoxy by Dow Chemical Co, MSDS for 3-glycidoxypropyl-trimethoxysilane by Sigma Chemical and Data sheet Bisphenol F diglycidyl ether by Sigma Aldrich) which calculates to **50.7 vol% Ag** and **49.3 vol%** epoxy that meets the volumetric ratio limitations in instant claim-1.

With regard to claims 12-13, the prior art teaches a dispersion of silver particles in bisphenol-F diglycidyl ether epoxy (Cl-8, Ln 1-41). All the limitations of the instant claims are met.

The reference is anticipatory.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary.

Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

1. Claims 5 and 8-10 are rejected under 35 U.S.C. 103(a) as being obvious over Durand et al (US 5,180,523).

The disclosure on the composition of conductive paste as set forth in rejection-1 under 102(b) is herein incorporated.

The prior art is silent about the aggregates containing at least two spherical primary particles per claim-5 or the volatile matter content per claim-8 or the water content per claim-9 or the surface oxygen content per claim 10.

With regard to claim-5, the prior art teaches using spheroidal and fine Ag powders, and the claimed agglomeration of at least two primary spherical particles would be obvious due to the natural tendency of fine particles to agglomerate.

With regard to claim 8, the claimed wt% volatile matter in the art paste composition containing Ag particles in bisphenol-F resin will be obvious, because prior art composition is similar to that by the applicants and similar compositions are expected to possess similar properties. This is further evidenced by the disclosure of Kawakita et al (US 5,652,042) that show a volatile content of less than 0.4 wt% for conductive pastes containing silver particles in bisphenol-F type and glycidyl ester type resins (CI-11, Table-2).

With regard to claims 9-10, the claimed water adsorption content and the surface concentration of oxygen over the conductive particles in the prior art composition would be obvious, because prior art composition is similar to that by the applicants, and further having same utility as conductive paste, and similar compositions are expected to possess similar properties (Also, see Omoya et al, US 6,139,777).

2. Claims 6, 11 and 14-16 are rejected under 35 U.S.C. 103(a) as being obvious over Durand et al (US 5,180,523) in view of Omoya et al (US 6,139,777).

The disclosure on the composition of conductive paste as set forth in rejection-1 under 102(b) is herein incorporated.

The prior art is silent about the disaggregation of the aggregates per claim-6, specific resin per claim-11 and the conductive particles comprising alloys per claim-14, and metal/alloy coated conductive or non-conductive core particles per claims 15-16.

In the analogous art, Omoya et al teach the composition of a conductive paste with low viscosity and improved resistance to humidity comprising: (a). Conductive particles such as copper with an average diameter of 0.5-20 micron and a specific surface area of 0.05-1.5 m2/g and/or conductive particles containing conductive or non-conductive core particles coated with metals such as Ag and Ag- alloys wherein the surface oxygen concentration was less than 1.0 wt% (Cl-3, Ln 1-19), and (b). 70-30 vol% resin such as epoxy (Abstract). The prior art further teaches using dimer acid glycidyl esters with amine adduct hardeners in the composition to benefit from low viscosity (Cl-3, Ln 1-19, Cl-11, Ln 30-36; Cl-13, Ln 34-38) and making the composition in a three-roll-mill (Abstract, Cl-20, Exampl-5).

Wit regard to claim-6, It would be obvious to a person of ordinary skill in the art to combine the prior art teachings to perform the mixing of components of Durand in a three-roll-mill of Omoya et al as functional equivalent with reasonable expectation of success because the teachings are in the analogous art and the claimed disaggregation of the aggregates would be obvious over the blending of the particles under shear in the three-roll mill (Abstract, Cl-20, Exampl-5).

With regard to claim-11, It would be obvious to a person of ordinary skill in the art to combine the prior art teachings to substitute the resin and hardener in the paste composition of Durand with the dimer acid glycidyl esters and amine adduct hardeners as functional equivalents to benefit from low viscosity with reasonable expectation of success, because Durand is concerned about suitable viscosity for screen printing (Cl-7, Ln 24-25) and Omoya et al is suggestive of using the composition by printing methods (Cl-1, Ln 45-46) and the combined prior art is suggestive of the claimed composition.

With regard to claims 14-16, It would be obvious to a person of ordinary skill in the art to combine the prior art teachings to substitute the conductive fillers in the paste composition of Durand with the conductive fillers of Omoya et al as functional equivalents with reasonable expectation of success because the combined prior art is suggestive of the claimed composition.

3. Claims 1, 5-6, 8-10 and 13-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamamoto et al (US 4,859,364).

Yamamoto et al teach the composition of a conductive paste comprising a dispersion of conductive particles comprising (a) conductive metal particles having an average particle size of 0.3-1.0 micron and (b) particles uniformly coated with conductive metal and having a particle size of not more than 1.0 micron in an organic medium comprising a resin such as phenolic resin <thermoset> and a solvent. The ratio of organic medium to the solids was in the range of 60-90 wt% solids and 40-10 wt% organic medium (Abstract, Cl-3, Ln 58; Cl-4, Ln 56-64). The conductive particles (a) were metals such as Pd, Ag, Pt and their alloys wherein the particle size ranged from 0.3-1.0 micron with good sphericity and uniformity, and particles agglomerated to a size of 1.0 micron or more that meets the limitation of degree of agglomeration in the claims (1.0 micron aggregate/0.3 micron particle=3.33 of degree of agglomeration). The conductive particles (b) included cores of TiO2, BaTiO3, Al2O3, SiO2, and glass or like coated with metal such as Pd, Ag, Pt or their alloys, and having a particle size of less than a micron (Cl-1, Ln 61 to Cl2, Ln 68). The wt% of the components when computed as vol% will meet the ratio limitations in the instant claims.

The prior art fails to teach the range of particle size, agglomerate size or the degree of agglomeration and is silent about the surface area of the particles in the claim-1.

With regard to claim-1, the prior art teaches the particle size, agglomerate size and the degree of agglomeration of the conductive particles that overlap with the instant claimed ranges, and In the case where the claimed ranges "overlap or lie inside ranges disclosed by the prior art" a prima facie case of obviousness exists. In re Wertheim, 541 F.2d 257, 191 USPQ 90 (CCPA 1976); In re Woodruff, 919 F.2d 1575, 16 USPQ2d 1934 (Fed. Cir. 1990). Further, the instant claimed surface area would be obvious

because the prior art particle size of the conductive particles is similar in size to that claimed by the applicants.

With regard to claims 5-6, the prior art teaches agglomerate containing spherical particles with a degree of aggregation similar to that by the applicants, wherein agglomerate containing two primary spherical particles and diaggregation of agglomerates would be obvious.

With regard to claims 8-10, the combined prior art teaches conductive particles Ag, Pt, Pd and their alloys dispersed in a thermoset resin, wherein the prior art composition is similar to that by the applicants and having same utility as conductive pastes, and similar compositions are expected to possess similar properties.

With regard to claims 13-14, the prior art teaches the conductive particles comprising Ag, Pt, Pd and their alloys.

With regard to claims 15-16, the prior art teaches the conductive particles comprising cores of particles coated with Ag, Pt, Pd and their alloys.

4. Claims 1, 5-6 and 8-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sasaki et al (JP 2000-297303) in view of Omoya et al (US 6,139,777).

Sasaki et al teach the composition of a conductive paint comprising a dispersion of conductive particles in a thermosetting binder such as alkyd of phenol resins and a solvent. The conductive particles included approximately spherical metal particles such as Ag, Cu, Ni, Pd and their alloys with a particle size regulated to ≤1.0 micron and/or agglomerates close to the primary particles (Abstract, Fig-c; Claims 3 and 5-6, Para 0012-0013, 0031, 0035, 0052). The degree of agglomeration will be obvious over the flock (aggregate) containing two primary particles.

The prior art fails to teach the ratio of the conductive fillers to the resin binder in the composition and specific surface area of the particles per claim-1, properties per claims 8-10, specific resin components per claims 11-12 and specific conductive fillers per claims 15-16.

In the analogous art, Omoya et al teach the composition of a conductive paste with low viscosity and improved resistance to humidity comprising: (a). Conductive particles such as copper with an average

diameter of 0.5-20 micron and a specific surface area of 0.05-1.5 m2/g and/or conductive particles containing conductive or non-conductive core particles coated with metals such as Ag and Ag- alloys wherein the surface oxygen concentration was less than 1.0 wt% (Cl-3, Ln 1-19), and (b). 70-30 vol% resin such as epoxy (Abstract). The prior art further teaches using dimer acid glycidyl esters with amine adduct hardeners in the composition to benefit from low viscosity (Cl-3, Ln 1-19, Cl-11, Ln 30-36; Cl-13, Ln 34-38) and making the composition in a three-roll-mill (Abstract, Cl-20, Exampl-5).

With regard to claim-1, it would have been obvious to a person of ordinary skilled in the art to combine the prior art teachings to formulate the conductive paste containing 30-70 vol% resin per the teachings of Omoya et al with reasonable expectation of success, because the combined prior art teaching is suggestive of the claimed composition and the teachings are in the analogous art of conductive pastes/paints. The instant claimed surface area will be obvious because the prior art particle size of the conductive particles is similar in size and shape to that claimed by the applicants.

With regard to claims 5-6, the prior art teaches an agglomerate containing two approximately spherical primary particles and the size of the agglomerate to be close to that of the primary particles.

With regard to claim 8, the combined prior art paste composition and components used in making the paste are similar to that by the applicants and similar compositions are expected to possess similar properties. This is further substantiated by the disclosure of Kawakita et al (US 5,652,042) that show a volatile content of less than 0.4 wt% for conductive pastes containing silver particles in bisphenol-F type and glycidyl ester type resins (Cl-11, Table-2).

With regard to claim 9, the combined prior art teaches conductive particles such as Cu, Ag and Au and their alloys, wherein the prior art composition is similar to that by the applicants and similar compositions are expected to possess similar properties.

With regard to claim-10, the combined prior art teaches conductive particles such as Cu, Ag and Au and their alloys with a surface oxygen content is less than 1 wt% (Cl-3, Ln 1-19).

With regard to claims 11-12, it would have been obvious to a person of ordinary skilled in the art to substitute the resins/binders in the composition of Sasaki with glycidyl ester epoxies including dimer acid glycidyl esters (Cl-8, Ln 65 to Cl-9, Ln 10; Cl-11, Ln 30-36) with amine adduct hardeners (Cl-13, Ln 34-

38) of Oyoma et al as functional equivalents with reasonable expectation of success, because Sasaki et al teach the use of thermosetting resins, and further disclose that the composition is not limited to the disclosure.

With regard to claims 13-14, the prior art teaches the conductive particles comprising Ag, Au, Ni and Pd and/or their alloys (Para 0052).

With regard to claims 15-16, it would have been obvious to a person of ordinary skilled in the art to substitute the conductive fillers of Sasaki et al with conductive particles containing conductive or non-conductive core particles coated with metals such as Ag and Ag- alloys of Omoya et al as functional equivalents with reasonable expectation of success, because the combined prior art teaching is suggestive of the claimed composition.

5. Claims 1, 5-6, 8-10 and 13-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sasaki et al (JP 2000-297303) in view of Yamamoto et al (US 4,859,364).

Sasaki et al teach the composition of a conductive paint comprising a dispersion of conductive particles in a thermosetting binder such as alkyd of phenol resins and a solvent. The conductive particles included approximately spherical metal particles such as Ag, Cu, Ni, Pd and their alloys with a particle size regulated to ≤1.0 micron and/or agglomerates close to the primary particles (Abstract, Fig-c; Claims 3 and 5-6, Para 0012-0013, 0031, 0035, 0052). The degree of agglomeration will be obvious over the flock (aggregate) containing two primary particles.

The prior art fails to teach the ratio of the conductive fillers to the resin binder in the composition and specific surface area of the particles per claim-1, properties per claims 8-10 and specific conductive fillers per claims 15-16.

In the analogous art, Yamamoto et al teach the composition of a conductive paste comprising a dispersion of conductive particles comprising (a) conductive metal particles having an average particle size of 0.3-1.0 micron and (b) particles uniformly coated with conductive metal and having a particle size of not more than 1.0 micron in an organic medium comprising a resin such as phenolic resin <thermoset> and a solvent. The ratio of organic medium to the solids was in the range of 60-90 wt% solids and 40-10

wt% organic medium (Abstract, Cl-3, Ln 58; Cl-4, Ln 56-64). The conductive particles (a) were metals such as Pd, Ag, Pt and their alloys wherein the particle size ranged from 0.3-1.0 micron with good sphericity and uniformity, and particles agglomerated to a size of 1.0 micron or more that meets the limitation of degree of agglomeration in the claims (1.0 micron aggregate/0.3 micron particle=3.33 of degree of agglomeration). The conductive particles (b) included cores of TiO2, BaTiO3, Al2O3, SiO2, and glass or like coated with metal such as Pd, Ag, Pt or their alloys, and having a particle size of less than a micron (Cl-1, Ln 61 to Cl-2, Ln 68). The wt% of the components when computed as vol% will meet the ratio limitations in the instant claims.

With regard to claim-1, it would have been obvious to a person of ordinary skilled in the art to combine the prior art teachings to formulate the conductive paste containing 60-90 wt% solids and 40-10 wt% organic medium per the teachings of Yamamoto et al with reasonable expectation of success, because the combined prior art teaching is suggestive of the claimed composition and have common utility in forming electrodes. The instant claimed surface area will be obvious because the prior art particle size of the conductive particles is similar in size and shape to that claimed by the applicants.

With regard to claims 5-6, the prior art teaches an agglomerate containing two approximately spherical primary particles and the size of the agglomerate to be close to that of the primary particles.

With regard to claim 8, the combined prior art paste composition and components used in making the paste are similar to that by the applicants and similar compositions are expected to possess similar properties. This is further substantiated by the disclosure of Kawakita et al (US 5,652,042) that show a volatile content of less than 0.4 wt% for conductive pastes containing silver particles in bisphenol-F type and glycidyl ester type resins (Cl-11, Table-2).

With regard to claims 9-10, the prior art teaches conductive particles such as Ag, Cu, Ni, Pd and their alloys, wherein the prior art composition is similar to that by the applicants and similar compositions are expected to possess similar properties.

With regard to claims 13-14, the prior art teaches the conductive particles comprising Ag, Au, Ni and Pd and/or their alloys (Para 0052).

With regard to claims 15-16, it would have been obvious to a person of ordinary skilled in the art to substitute the conductive fillers of Sasaki et al with conductive particles containing core particles coated with metals such as Ag, Pd and Ag/Pd- alloys of Yamamoto et al as functional equivalents with reasonable expectation of success, because the combined prior art teaching is suggestive of the claimed composition.

Response to Arguments

Applicants arguments filed 02/09/2007 have been fully considered and they are not persuasive to over come the above rejections based on Durand et al (US - 5,180,523). Applicant's argument that Durand et al does not teach the claimed degree of aggregation and the ratio of the conductive particles (Res, Pg-8, Para-3) has been addressed in the rejection-1 under 35 USC 102(b), and the agglomerates are naturally formed of the primary particles.

For the reasons set forth above, the applicant's composition fail to patentably distinguish over the prior art compositions.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kallambella Vijayakumar whose telephone number is 571-272-1324. The examiner can normally be reached on 8.30-6.00 Mon-Thu, 8.30-5.00 Alt Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Douglas McGinty can be reached on 571-272-1029. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

KMV
May 09, 2007.

Lorna M. Douyon

LORNA M. DOUYON
PRIMARY EXAMINER